

Effective teaching in diverse classrooms

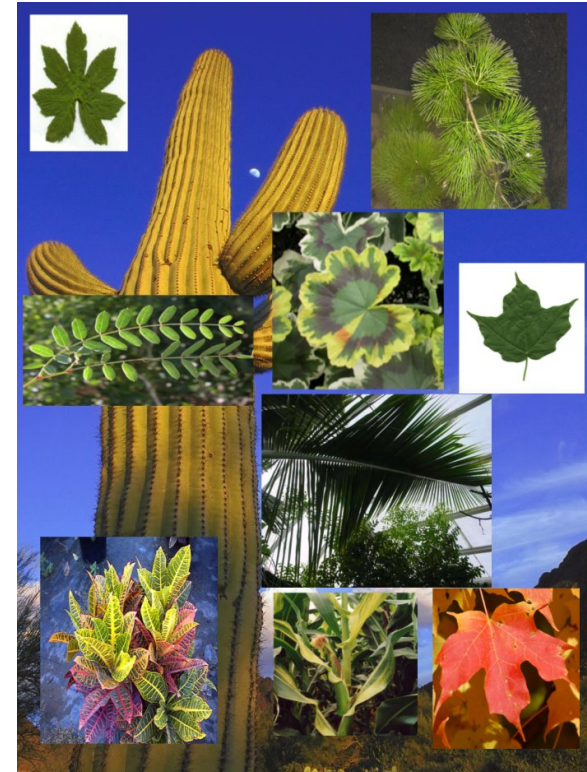
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Why think about diversity?

- Diverse experiences, values, and learning styles mean that teaching is not one-size-fits-all
- Diversity can promote team innovation... but also conflict
- You can improve individual performance and create a collaborative environment



Public domain image,
Wikimedia Commons.

Goals for today's session

- Increase awareness of obstacles to learning
 - in ourselves and in our students
 - that especially affect marginalized groups
- Discuss compensatory strategies
- Ground rules for discussion:
 - be honest but diplomatic
 - avoid judging or accusing each other
 - shared personal experiences stay in this room
 - in summary: both act in and assume good faith

***But I treat everyone the
same way...***

Part 1... maybe you don't

Part 2... even if you do

**Part 1... maybe you don't
(treat everyone the same)**

Understanding Unconscious Bias

What is unconscious bias?

- Implicit association test
 - typing task to measure automatic associations
- Many people display implicit bias/stereotype
- Even members of the marginalized group may internalize self-bias



Author: Project Implicit

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Bias linked with discrimination and performance gaps

- Female orchestra membership ↑ w/anonymity
- Job candidate bias (likely much is implicit)
 - send *identical* resumes except name
 - male name called in more than female
 - typically White name called more than Black
- Swedish research fellowship bias
 - women require 2.5x paper productivity to be judged equal to a man (accounting for journal tier)
- Internationally, implicit bias score correlated with stereotypical performance gaps

Combating unconscious bias

- Bias test: not an accusation or an inevitability
- Changing implicit associations takes time...
 - a product of culture and personal experience
- ... but changing actions is “easy”
 - cultivate experiences counter to your bias
 - consciously compensate for the bias
- Awareness is the first step to changing behavior and ultimately implicit attitudes

Unconscious bias in the classroom: example

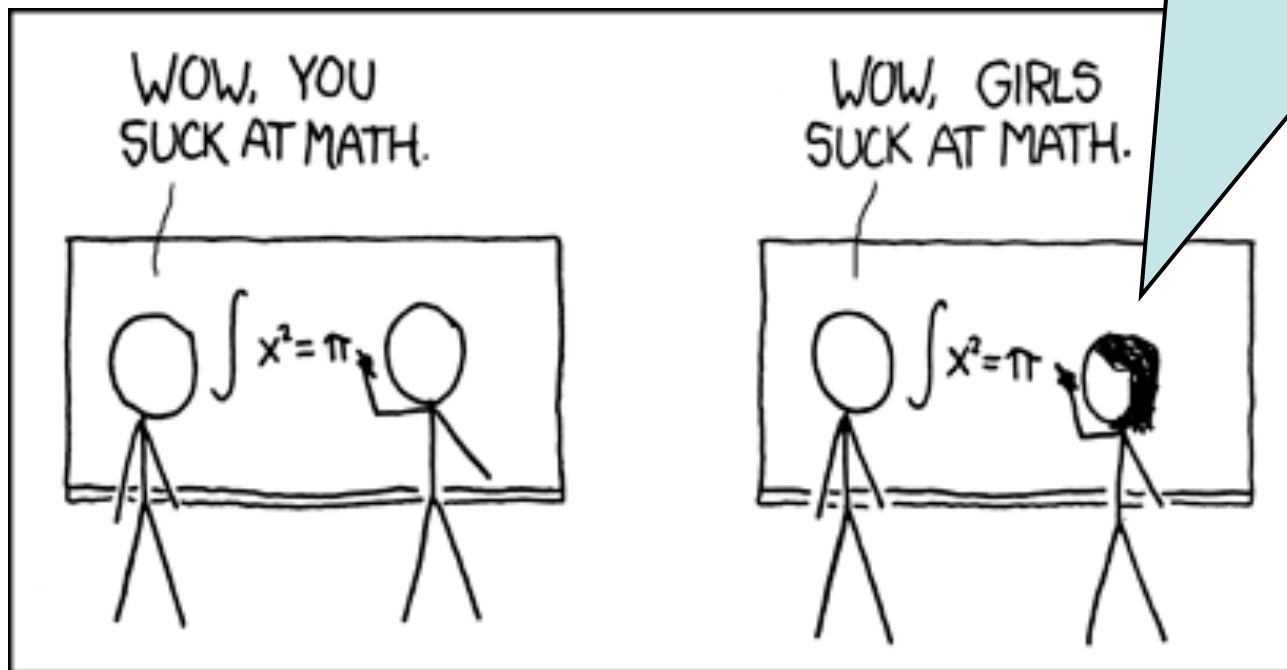
- Asian students treated as “model minority”
- Impact on struggling student of Asian descent
 - low homework scores ignored
 - greeted by surprise if s/he comes for help
 - furthers cycle of feeling marginalized
 - overall: given less opportunity/support to improve
- Solution: self-check your assumptions

**Part 2... even if you do
(treat everyone the same)**

Understanding Stereotype Threat

Stereotype threat in short

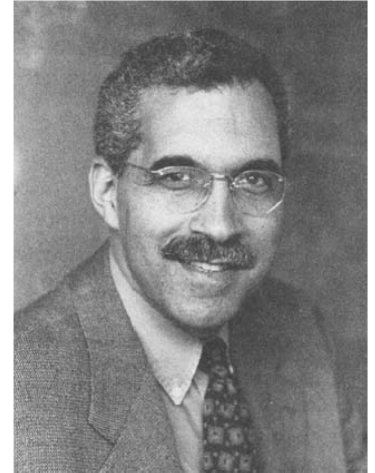
I better not get this problem wrong! He'll think I'm just another math-challenged girl.



xkcd.com

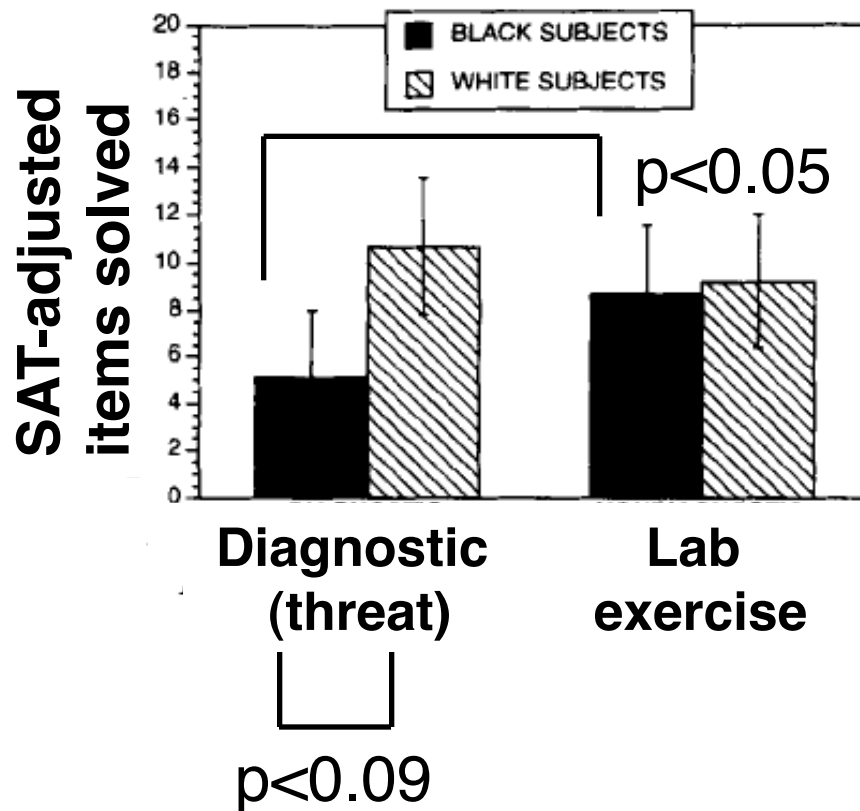
What is stereotype threat (ST)?

- Under-performance in anticipation of being judged according to a negative stereotype
 - anxiety diverts cognitive resources
 - Activated by circumstance
 - context in which stereotype may apply
 - working at edge of one's knowledge/skills
 - Academically *strongest* students most affected
 - who identify with the domain (e.g., science)
 - who are generally confident about their abilities
 - who care about not “confirming” stereotypes
 - Work of Claude M. Steele, others (>100 studies*)
- *Paul Sackett and others are skeptical of ‘real-world’ relevance



Claude M. Steel
L.A. Cicerco,
Stanford News
Service ©

Reducing stereotype threat (ST) improves student performance



- GRE verbal exam
- High-achieving cohort
- Black student scores significantly increased to equal White student scores when threat gone

C. Steele & J. Aronson *J Pers Soc Psy* **69**:797-811 (1995).

Consequences of ST

- Short-term: under-performance
- Long-term: stop trying
 - have to prove oneself at each new level
 - may avoid risking failure and judgment
 - thus avoid learning!
 - “disidentify” from domain as source of identity and self-esteem

ST can affect *anyone*

- Most obviously (and disproportionately) affects historically marginalized groups
- But context matters
- Any difference from the “in-group”
 - older person playing a memory game
 - smallest kid in a sport
 - engineer in a Harvard humanities class

Developing a personal understanding of ST

Within your group, discuss a time that you made a conscious effort to avoid “confirming” a negative stereotype.

Did anything trigger your feeling of threat – e.g., someone making a comment – or was it an automatic response?

Reducing ST: wise criticism

- Telling students that you are using high standards AND that you believe they can meet those standards is *highly* motivating
- Perils of criticism with no context
 - student mistrust
 - disengagement from the task
 - misplaced efforts
- Perils of over-praising or under-challenging
 - same as above but in slightly different form
 - student underachievement, discouraging future effort

Wise criticism example

Student gave a scripted oral presentation followed by a thoughtful Q&A, and overall lacked confidence.

You did such a great job [in Q&A]. I was surprised by how good and natural an extemporaneous speaker you are, because you spent the entire talk reading from your slides and notes! This approach was really a loss and misuse of your talents, and I hope next time you will trust yourself to speak “off script” more. I appreciate also your honesty about which parts of the paper you didn’t understand, or thought you didn’t – in fact, you did a great job explaining [them].

Not-so wise versions

- *Great Q&A, but please improve talk next time*
 - Vague
- *You'll have to stop sounding so uncertain if you want to be taken seriously*
 - cold/demotivating
- *This was way better than I expected going in. Keep up the good work!*
 - damning with faint praise, under-challenging

Wise criticism exercises

Imagine that you have a student who did well on homework assignments and answered questions in recitation but bombed the first exam. What might wise and not-so-wise criticism sound like?

How about a student who has been consistently struggling? How might you approach him or her when you're not sure s/he is prepared to meet the highest standards?

Reducing ST: model resilience

- Be candid about your own past struggles as part of a learning *process*
- Explore, don't downplay recitation errors: "let's talk about why this mistake is easy to make..."
- Normalize asking for help
 - casually mention "several people asked about this in OH" to decrease anxiety/stigma about attending
 - make problem-solving process and assumptions explicit, build in space for questions by default
- Intra- and cross-group sharing both important

Reducing ST: promote sense of community and belonging

- Reinforce student identities as (apprentice) biological engineers
 - emphasize professional development, not grades
 - draw out excitement, not anxiety
- Use inclusive language
 - avoid always saying “he” as the default human
 - diversify examples of scientists when possible
 - diversify conceptual analogies (e.g. not always sports)
 - contextualize analogies and references to pop culture

Differences in learning styles

- Perceptual styles and perceptual needs:
 - tangible versus abstract (theory/experiment)
 - whole versus parts (big picture/details)
- Conceptual styles:
 - synthetic versus divergent
 - reflective versus active processing (e.g., comfort with thinking out loud)
- Emotional styles: response to criticism
- Relevance of cultural and language background
 - e.g., oral vs. written vs. pictorial processing

Accommodating different learners

- No *one* best way to teach or learn!
- To reach diverse learners, vary your approach
 - visual support benefits almost *everyone*
 - ditto for hands-on and real-life examples
 - interaction w/you (Socratic)
 - collaboration w/peers (discuss w/partners → class)
 - time to think (try problem alone → whole class)
- If something isn't working, don't just repeat it
 - have more than one way to explain something...
 - ... getting back to the student later is okay
 - ask questions to hone in on key conceptual difficulty

Parting thoughts about diversity

“Students who believe in the immutability of intelligence focus on ‘performance goals’; they seek to demonstrate rather than enhance their competence and are apt to withdraw from tasks where they risk failure. -from G.L. Cohen, C.M Steele, L.D. Ross, *Pers Soc Psychol Bull* 25:1302 (1999).

NOT a zero sum game. Many strategies we discussed here improve *everyone’s* learning.

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